

SOUTHEAST



WORKING GROUP
FINAL REPORT

January 16, 1997

*Southeastern
Pennsylvania
Ozone Stakeholder
Working Group*



Final Report

January 16, 1997

Convener: Commonwealth of Pennsylvania

James M. Seif
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17105

Bradley L. Mallory
Department of Transportation
555 Walnut Street
Forum Place
Harrisburg, PA 17101

Facilitator: CDR Associates
100 Arapahoe Avenue
Boulder, CO 80302

March 12, 1996

See Attached List

Dear _____:

We are pleased to invite you to participate in the Southeast Pennsylvania Clean Air Stakeholders Group. The Stakeholders Group will work during the next year to develop a course of action for the attainment and maintenance of the health-based ozone standard, a strategy tailored to meet the regional needs of the Philadelphia area.

We believe that new clean air strategies in areas with continuing air pollution problems should be developed from the ground up, by those with significant stakes in the outcome. The Commonwealth needs a plan that is based on good air pollution science, is equitable among air pollution sources and meets the requirements of the federal Clean Air Act Amendments. The Clean Air Stakeholders Group has been charged with this important mission. We expect the outcome of this effort to be recommendations that the Commonwealth can use as the basis for continuing to meet its clean air obligations. The group will operate by a consensus decision-making process. Areas on which there is no consensus will also be identified.

Since the sources contributing to ozone pollution and the people affected by it are diverse, the stakeholders group has to be large enough to represent these interests, yet small enough to form a group that can work together. You have been selected because of your ability to provide appropriate representation, as well as your personal qualifications and capacity to work toward consensus on a broad range of clean air issues.

The first meeting has been scheduled for April 1 and 2, 1996. Most of the time at this convening meeting will be spent on developing principles of operation for the group, identifying agenda items, and participating in a brief training session on interest-based negotiation and consensus building. The group will also develop its own meeting schedules. You will be getting a packet of materials for the first meeting in the next few days. The Commonwealth will reimburse you for your travel expenses through a procedure which will be explained at the first meeting. As you already know, the Commonwealth has engaged an independent facilitator from CDR Associates to help us achieve a common understanding of the problem and arrive at potential solutions.

Consensus is not an easy process. It takes communication, compromise, common sense and most of all, commitment. We appreciate your willingness to work with us, and we look forward to working with you in the coming months. Should you have questions in the meantime, please feel free to contact Robert Barkanic, Special Assistant; Air, Recycling and Radiation Protection, DEP, at 717-772-2725.

Sincerely,



James M. Seif
Secretary
Department of Environmental Protection

Sincerely,



Bradley L. Mallory
Secretary
Department of Transportation

January 16, 1997

The Honorable James M. Seif
Secretary
Department of Environmental Protection
P.O. Box 2063
Harrisburg, PA 17105

The Honorable Bradley L. Mallory
Secretary
Department of Transportation
555 Walnut Street
Forum Place
Harrisburg, PA 17101

Gentlemen,

The Southeastern Pennsylvania Ozone Stakeholders submit the enclosed report for your consideration. This report provides the results of our deliberations, including recommended control measures, supporting assumptions and context. In addition, we have indicated non-consensus items which we feel will require additional attention from the Commonwealth.

In accordance with the stakeholders' adopted mission statement and charge, the recommendations are based on the current health-based hourly ozone standard of .12 ppm to be achieved by the year 2005.

We look forward to your comments and your full support for our recommendations. Our deliberations were thorough and diligent; the outcome merits serious consideration. Collectively, the stakeholders stand ready to meet with you to discuss these proposals.

Sincerely yours,

Southeastern Pennsylvania Ozone Stakeholders

James J. Ruggenbach
Richard G. Bickel Jr.
Shirley M. Havelle
Thomas J. D'A. Alexander Jr.
James P. Capella
Audrey Brannan
Nancy D. Janko
Peter P. Jankin
Mark C. Hammond Esq.
Edward J. Wiffle
Francesca Carlini


Chester County Health Department


Automotive Service Association of Pennsylvania


James Hunt & Co.


City of Philadelphia


ASE SAE


Sea Change

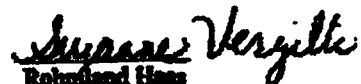

Sun Company/American Petroleum Industries of Pennsylvania


U. S. Environmental Protection Agency


AAA Mid-Atlantic


Clean Air Council


DEP Citizens Advisory Council


Robert Haas


Pennsylvania Department of Transportation


Delaware County Transportation Management Association


Montgomery County Planning Commission

INTRODUCTION

Stakeholders Mission

The Governor of Pennsylvania, through the Pennsylvania Department of Environmental Protection and the Pennsylvania Department of Transportation, created the Southeastern Pennsylvania Ozone Stakeholders to recommend control strategies to the Commonwealth for attainment and maintenance of the current health-based standards and the requirements of the 1990 Federal Clean Air Act Amendments. Under the Clean Air Act Amendments, the five counties in southeastern Pennsylvania—Bucks, Chester, Delaware, Montgomery and Philadelphia—are currently classified as "severe non-attainment" for ground-level ozone. The non-attainment area also includes parts of New Jersey, Maryland and Delaware.

Ground-level ozone is a colorless, odorless gas produced when nitrogen oxides (NO_x) and volatile organic compounds (VOC) react in the presence of heat and sunlight.

In accordance with the stakeholders' adopted mission statement and charge, the recommendations in this report are based on the current health-based standard of .12 ppm of ozone to be achieved by the year 2005.

The stakeholders attempted to balance emission reductions equitably among different source types—area, mobile and stationary. It is important to preserve this balance as the recommendations are implemented.

Stakeholders Process

The stakeholder effort was a public process, held in open meetings, representing a broad base of constituencies. In addition, the stakeholders made an effort to ensure that other groups and the general public were aware of the process and had an opportunity to provide us with input. The stakeholders held one public input meeting on November 7, 1996. The recommendations contained in this report are the result of long hours of deliberation and struggle. The stakeholders met for two full days each month, from April through December to discuss and, whenever possible, to find agreement on strategies that can materially improve air quality in southeastern Pennsylvania.

At the same time that the stakeholders began to deliberate, the Inspection and Maintenance (I/M) Working Group began to design the Commonwealth's decentralized inspection and maintenance program. The stakeholders worked to avoid issues associated with implementation of the inspection and maintenance program, leaving those issues to the I/M Working Group.

Stakeholders Members

The Southeastern Pennsylvania Ozone Stakeholders represent a wide range of interests from environmental and citizen groups, industry, public utilities, small business, transportation, government, and motorist and health-care organizations. Twenty-eight stakeholders were invited to participate in the stakeholders process. During the process, some invitees withdrew, and others were added by the group to maintain the group's balance.

CONSENSUS AGREEMENTS

The recommended strategies outlined in this report are based on a consensus decision-making process as outlined in the Stakeholders' Operating Agreement (See Appendix D). Consensus is an agreement built by identifying and exploring all parties' interests and drafting a recommendation that satisfies these interests to the greatest extent possible. The recommended control measures throughout this report are labeled as consensus recommendations only if all the stakeholders agree that their major interests have been taken into consideration and addressed in a satisfactory manner. This report also contains items without consensus agreements. In those cases, the control measure is described along with differing points of view.

STAKEHOLDERS EVALUATION PROCESS

The deliberations of the Southeastern Pennsylvania Ozone Stakeholders have followed two guiding principles and objectives: 1) to identify control strategies that collectively produce regional air quality that meets the current health based standard, and 2) to reflect the unique conditions of southeastern Pennsylvania. In so doing, the recommendations contained in this report seek to balance federal requirements for air quality with cost effective strategies that protect the public health and the regional economic integrity of the five county non-attainment area.

EMISSIONS ASSESSMENT

Modeling

The stakeholders reviewed Urban Airshed Modeling results as a way to test transport and boundary assumptions, examine the impact of control strategies already adopted or proposed for implementation and lay the groundwork for southeastern Pennsylvania's subsequent attainment demonstration.

The transport (movement) of ozone and its precursors, VOC and NOx, into and out of the five-county area was discussed many times during stakeholder deliberations,

including during modeling work. The impact of transport on attainment appears to be significant, particularly for NOx. The stakeholders make their recommendations in anticipation that other regions, particularly up-wind areas, will implement similar levels of control to positively impact southeastern Pennsylvania's air quality. The stakeholders recognize that the five-county area will not demonstrate attainment until downwind areas are also able to demonstrate attainment.

Stakeholders' Emissions Targets

In southeastern Pennsylvania there are a variety of different sources of both NOx and VOC. Point sources include large industries and utilities. Area sources are small emission sources. Mobile sources, both highway and off-road vehicles, are the third category of ozone forming emissions. The 1990 estimates of pollutant by source (excluding biogenic or natural emissions) are depicted below.

Pennsylvania Portion of Philadelphia Non-Attainment Area Anthropogenic VOC Emissions by Source

Estimated Total Emissions: 612 tons per summer day
Point 24.5% Area 30.4% Mobile 45.1% (Highway 30.7%, Off-Road 14.4%)

Pennsylvania Portion of Philadelphia Non-Attainment Area Anthropogenic NOx Emissions by Source

Estimated Total Emissions: 451 tons per summer day
Point 37.7% Area 5.1% Mobile 57.2% (Highway 35.1%, Off-Road 22.1%)

Source: Pennsylvania Department of Environmental Protection

The stakeholders spent a great deal of their time reviewing emission inventories, emission projections and other baseline information. In one such presentation, Dr. S.T. Rao from the New York State Department of Environmental Conservation, suggested that a 25% reduction in VOC and a 50% reduction in NOx from the 1990 baseline across the entire eastern United States could lead to attainment. The group agreed to use the information from Dr. Rao as the best available overriding strategy to set emission reduction targets. Because NOx and VOC emissions are not evenly distributed throughout the region, the stakeholders understand that these reduction goals must be viewed as regional in nature. Thus, they will not be achieved in Southeastern Pennsylvania alone, but over a multi-state area. The development of Pennsylvania's attainment demonstration will be coordinated with Pennsylvania's neighboring states and the Ozone Transport Commission.

Reductions from adopted and proposed control measures are projected to result in a 35% reduction of VOC emissions by the year 2005. The stakeholders recommend VOC control strategies beyond the 35% reduction from 1990 baseline. Thus, the 25%

VOC reduction target (approximately 150 tons per day) will be exceeded by as much as 100 tons .

Reductions from adopted and proposed control measures are projected to result in a 27% reduction in NOx emissions by the year 2005. The group looked for additional NOx reductions beyond the 27%. To reach 50% reduction from 1990 baseline, the stakeholders would have to identify measures that reduce approximately 105 tons of NOx per typical summer day. However, the NOx reductions were more difficult to achieve, and the stakeholders identified measures that reduced approximately 50 of the 105 tons.

Voluntary measures recommended by the stakeholders in this report could yield approximately 8 additional tons of VOC and approximately 10 additional tons of NOx.

The stakeholders recognize that the interplay between the two pollutants is uncertain. The additional reduction in VOC emissions will result in benefits to local air quality as well as benefits to the more regional ozone problem.

The following table lists the recommended strategies and an estimated NOx or VOC reduction. In some cases no estimated emission reduction is listed. Those cases include:

- recommended strategies that require research to quantify (e.g. heavy-duty diesel inspection)
- recommended strategies with unresolved implementation issues (e.g. change in fuels beyond the five-county area), or
- strategies with uncertain agency commitment (e.g. 200 additional CNG buses).

**Southeast Pennsylvania Ozone Stakeholders
Control Measures and Emission Reduction Estimates**

Description	VOC (tpd)		NOx (tpd)	
	Reduction	Total	Reduction	Total
		397		331
2005 CAA Baseline Emission Estimate				
Auto and Truck Body VOC Content Limits	3.8		0	
Auto and Truck Body Refinishing	1.0		0	
Degreasing	5.9		0	
Gasoline Service Stations: Stage II Vapor Recovery Systems	1.9		0	
Lawn Care	11.2		0.7	
Additional Remote Sensing	1.2		0.6	
Heavy-Duty Diesel NOx Research			13.5	
National Low Emission Vehicle	11.5		1.4	
Alternative Fuels Programs	2.4		0.07	
Airport Emission Controls	0.2			
Fuel Changes Beyond 5-County Area				
Southeast Pennsylvania Transportation Authority				
Clean Diesel Program	0.5		2.2	
Park and Ride Lot Expansion	0.03		0.04	
Rail Headway Improvements	0.04		0.06	
Improvements to Suburban Bus Service				
CNG Buses			6.4	
Utility Boilers: Phase III of NOx MOU	0		3.5 to 4.5	
Industrial Boilers	0		6.8 to 8.6	
Process Heaters	0		11.0	
Reciprocating IC Engines	0			
Subtotal	39.7		46.3 to 49.1	

Southeast Pennsylvania Ozone Stakeholders Voluntary Measures

Description	VOC (tpd) Reduction	NO. (tpd) Reduction
Mobility Alternatives	0.08-1.76	0.1-1.94
Comprehensive Regional Ride Sharing		
Transit Chek		
Telecommuting		
Alternative Work Schedules		
Educational Programs and Ozone Action Program	4.6-5.1	7.4-7.8
School-Based Public Awareness		
We Care Programs Promotion		
Outreach and Education		
Transit Strategies		
Voluntary No Drive Days		
Voluntary No Burn Days		
Legislative Initiative		
Bicycle Promotion and Improvement		
Work/Rail/Non-work Trips		
Land Use Planning		
<u>Promote Community Centers and Transportation Centers</u>	1.1	1.0
Subtotal	5.8 - 8.0	8.5 - 10.7
Total	45.5 - 47.7	53.9 - 58.9